The use of alternative preparations from the *B.N.F.* made a much greater difference to the prescribing costs of practice A than of practice B: but even in practice B it would have brought about an economy in excess of £500 over a 12-month period.

Conclusions

This analysis suggests that the claim of the Joint Formulary Committee that the preparations in the *B.N.F.* can serve almost all the requirements of prescribers is probably true for general practice and that a substantial reduction in the cost of drugs could be achieved without any appreciable loss to patients. Pharmaceutical services cost the Northern Ireland General Health Services Board more than £5m. in 1965 and the cost of drug-prescribing was over £4.4m. A saving of the order achieved in the general sample of prescriptions in this investigation would represent a reduction of the drug bill by approximately one-third and save over £1m. per annum.

It is also likely that substantial saving would result from more extensive use of the *B.N.F.* in prescribing in hospitals. But in hospitals there is another important reason why the use of the *B.N.F.* should be encouraged. Its use would eliminate, especially for nursing staff, much of the confusion due to the present indiscriminate use of two systems of drug nomenclature and would reduce the chances of error (Crooks, 1965; Crooks *et al.*, 1965; Wallace, 1965) in the administration of drugs on wards.

The detailed investigations here described were difficult and time-consuming, and the decisions made about individual preparations are based on personal opinions and may be justifiably criticized. The findings, however, suggest that there is a need for similar and more extensive investigations of prescribing both in general practice and in hospitals.

We are indebted to Dr. P. C. Elmes and Dr. Jean Langlands, who helped in the assessment of the prescriptions, and to Dr. J. C. Crawford, who so willingly shared with us the benefit of his long experience of prescribing in general practice. We wish to thank Mr. G. D. Stewart, the secretary of the Northern Ireland General Health Services Board, Dr. R. P. Maybin, Medical Officer, and Mr. A. W. Kernahan, Pharmaceutical Officer of the Board. Without their help the investigation would not have been possible. We wish also to express our gratitude to the staff of the Pricing Bureau, who costed all the original prescriptions and the amended lists with the alternative preparations from the *B.N.F.* suggested by the investigators.

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MEDICAL HISTORY

Dr. John Fothergill, Physician and Humanist

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In the middle of the eighteenth century Dr. John Fothergill was one of the most distinguished physicians in this country, though his reputation has weathered less well than that of his near contemporaries Sydenham and Heberden; and there are now few, except medical historians, who remember his name. The main landmarks of his career are easily summarized. He was born on 8 March 1712 near Richmond, in Yorkshire, one of the several children of a Quaker merchant of some local consequence, schooled at Sedbergh, and apprenticed when he was 15 or 16 to an apothecary in Bradford. His apprenticeship ended, he entered the medical school at Edinburgh, which at that date was an exciting place, beginning to seethe with revolutionary new ideas about experimental physiology as the truly scientific basis of medicine— notions caught from the great Boerhaave of Leiden. In Edinburgh Fothergill's ability was soon spotted by Alexander Monro, the famous anatomist, who made use of him to revise his textbook on osteology. He graduated in 1736 with the degree of M.D. by a thesis in Latin on the use of emetics, an essay in therapeutics which now sounds oddly tedious.

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Soon after, he moved to London and for a couple of years worked on the wards of St. Thomas's Hospital, famous at this time because of Dr. Richard Mead, who seemed to Johnson to have "lived more in the broad sunshine of life than almost any man." Here, it was related by contemporaries, Fothergill's "application was unremitting, and his comments on the cases often listened to by his seniors." Finally, after making a brief tour of Belgium, Holland, and Germany to see something of medicine in those countries, he set up in practice about 1740 in a house close to Lombard Street, in the City. In 1744 he was admitted a Licentiate of the Royal College of Physicians. That is, in modern terminology, he passed the Membership examination, which then, as now, was something of a hurdle, and he was the first Edinburgh graduate to do so. One can infer what the examination was like around that date from the fascinating account of his own experience given by James Yonge in his diaries, which were published a year or two ago.

Fothergill never became a Fellow of the College because its statutes then restricted the honour to medical graduates of Oxford and Cambridge alone, and in later years he was involved in some bitter wrangles with the College, which stemmed, I

am sure, from his resentment at being excluded from its hierarchy. But other distinctions came his way to make up for this exclusion. The Royal College of Physicians of Edinburgh was glad to confer its Fellowship on him in 1754; he was admitted to the jealously guarded Fellowship of the Royal Society in 1763; and in 1776 he became one of the few foreigners ever honoured by Fellowship of the Royal Society of Medicine of Paris. He died a bachelor (one of his sisters having kept house for him for many years) on 26 December 1780, and so great was popular esteem for him that over 70 coaches and post-chaises followed his coffin to the cemetery for its interment. Incidentally, the extent of his household fame is proved by the fact that on his death Wedgwood's struck a medallion of his head, and a pottery bust as well.

Compassion

From this brief account it is clear that the graph of his life followed a steady upward curve of success. He started a poor man, and the beginning of his practice in London was among

John Fothergill (1712-1780). Mezzotint by Valentine Green after Gilbert Stuart (Posthumous). From the impression in the Wellcome Historical Medical Museum. (By courtesy of the Wellcome Trust.)

the poor, to whom he endeared himself as much by the genuine kindness of his manner as by his clinical acumen. He always kept this compassion for the needy, even at the height of his fame, making a point of setting aside some of his time to see and treat people who could not afford a fee. Within a few years this reputation grew so much that tremendous demands were put upon him, and he regularly worked 16 to 18 hours a day. Later, when he leased a country house in Cheshire for a couple of months every summer, to escape from the pressure of work in London and to catch up with his voluminous correspondence (a friend said that on holiday he spent six hours a day writing letters), he still could not rid himself entirely of the burden of his reputation. So patients and their relations would discover in advance the staging points of his journey by coach, to besiege him for advice about themselves or someone too ill to bring.

He was concerned about the wants of the poor of whatever creed, and was ahead of his time in matters of public health. He projected the need for better city planning to allow "expedi-

tious communication through the streets of London," and to reduce the dreadful hazard of fire. He urged the need for public baths as a measure to prevent disease, and was anxious to see better public cemeteries in a day when the poor were buried in large pits, not filled in with earth till they had their full complement of coffins, "whereby these wholesale receptacles of the dead become offensive." He planned and financed schemes for better food distribution to avoid starvation in lean times, and invented a special cheap bread for the poor made with one part of potatoes and three parts of wheaten flour. Like the good reformer he was, he was evidently cranky enough to use it in his own home, as Lettsom noted loyally, "I have often ate it, and even were the price equal, I should prefer it to that made with the finest flour." He was a dedicated opponent of the slave trade, and his pity was stirred by the miserable conditions and overcrowding of convicts. With the philanthropist John Howard he was invited to give evidence in the House of Commons which led to an Act of Parliament in 1774 to improve their lot, and the two were afterwards appointed to a Royal Commission to design new prisons. Fothergill was also instrumental in causing the Government to create posts of prison medical officer.

Personality

It is always gratifying to know what somebody looked like, to fill out one's idea of their personality—and a clear picture of Fothergill emerges from what his biographer, Elliot, wrote.

"The person of Dr. Fothergill was of a delicate, rather of an attenuated make. His features were all character. His eye had a peculiar brilliancy of expression, and he was remarkably active and alert. He was learned, careful and assiduous as a physician, and spending almost the whole of his life in the exercise of his calling, had very little time to devote to pleasure or amusements. His dress was neat, plain and decent, peculiarly becoming himself; a perfect transcript of the order and neatness of his mind. He thought it unworthy of a man of sense, and inconsistent with his character, to suffer himself to be led by the whim of fashion. At his meals he was remarkably temperate, eating sparingly but with a good relish, and rarely exceeding two glasses of wine at dinner or supper, by which he preserved his mind vigorous and active, and his constitution equal to all his engagements."

Further, deathbed accounts can give poignant insight into a man's nature, and I think doctors often show considerable courage when faced with their own final illness, perhaps because they have seen so much of death already. Fothergill was no exception, and, as an experienced physician, he must have known for some time what was wrong. His close friend Lettsom sketched the details.

"It was about the middle of November 1778 that, on waking out of a short sleep, a forcible inclination to make water ensued, but without the power. For a day or two preceding, an unusual difficulty had attended the act. This total suppression required manual assistance for upwards of two weeks, which was sometimes accompanied with excruciating pain. In the height of his distress I visited him, and found him calm and recollected; he described with wonderful serenity of mind, his acute misery, expressing a pious and Christian resignation. Yet as soon as he was recovered, the importunities of the sick forced him again into his former arduous and active life, and for the space of two years he seemed to enjoy his usual degree of health, or at least he rarely complained." (Parenthetically, in contrast to this statement, it must be significant of Fothergill's unease during this time that he made a special pilgrimage to Yorkshire to see the country of his boyhood and to visit his father's grave.)

"On the 12th day of December 1780," Lettsom continued, "he was again seized with a suppression of urine, which no art could remove. I saw him in a state of acute pain, which seemed almost insupportable; he had strength enough to raise himself up in bed, but with such extreme thirst, that while he leaned on his right arm, he held in the left hand a glass of wine and water, of which

he was obliged to sip after every sentence, to enable him to speak. He was as serene as in perfect health; he endeavoured, indeed, to assume that degree of cheerfulness which was natural to him when well, and described his complaints and their probable fatal termination. All may envy this fortitude of mind which sustained him to his final dissolution."

The story is clearly that of carcinoma of the prostate leading to retention and terminal uraemia. This diagnosis was confirmed by post-mortem dissection, which showed what was referred to as "a schirrous enlargement of the prostate"—it had compressed the neck of the bladder so tight as to prevent introduction of the finest catheter.

Contributions

There are three contributions Fothergill made which are of lasting historical significance, two being of special interest to the neurologist. First, there is his remarkably accurate and quite original account of trigeminal neuralgia, which he called simply "a painful affection of the face." Secondly, he had some apt things to say about migraine, from which he suffered himself. His description is not the first on record, yet it is valuable because he marshalled the salient features as none had done before him. Thirdly, he was able to add his own clinical experience to the delineation of angina pectoris which Heberden had recently given, and to record significant post-mortem findings in one case for the first time in history.

Lastly, among his other achievements I must mention that Fothergill was the founder and leading figure of a small "Society of Physicians" which met occasionally to read papers to one another "for their mutual improvement in the practice of their profession." The Society published its proceedings irregularly under the title *Medical Observations and Inquiries*, six volumes being issued between 1757 and 1784, and it was here that many of Fothergill's publications first appeared; the various collected editions of his works coming out only after his death.

Of course Fothergill must have had some faults. Lettson hints that a certain obstinacy of mind and a quick and dogmatic belief in his invariable rightness were among them. His arguments with the College of Physicians, which he pursued to the point of actual litigation, suggest a combative streak, and there was an unfortunate episode concerning a Dr. Leeds who was appointed physician to the London Hospital. On hearing of the appointment Fothergill abruptly exclaimed, "Take heed he does no mischief," and soon found himself involved in a much-publicized action for slander, which ended before the Lord Chief Justice. But Fothergill's failings, whatever they were, were far outweighed by his virtues. Of course I would not claim for him the experimental genius of Harvey or the massive understanding of Thomas Willis, both of them heavy stars in the firmament of medical history. His talents were different in kind and degree. As an epitaph, I cannot do better than quote Benjamin Franklin: "If we may estimate the goodness of a man by his disposition to do good, and his constant endeavours and success in doing it, I can hardly conceive that a better man ever existed."

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Approved Names

The last supplements to the December 1964 consolidated list of Approved Names were published in the *B.M.J.* of 13 and 27 August 1966 (p. 405). A supplementary list dated August 1966 is printed below. Communications relating to Approved Names should be addressed to the Secretary, British Pharmacopoeia Commission, General Medical Council, 44 Hallam Street, London W.1.

Approved Name	Other Names	Action and Use
Acetorphine ..	5-Acetoxy-1,2,3,3a,8,9-hexahydro-2a-[1(R)-hydroxy-1-methylbutyl]-3-methoxy-12-methyl-3,9a-etheno-9,9b-iminoethanophenanthro[4,5-bcd]furan O ³ -Acetyl-7,8-dihydro-7a-[1(R)-hydroxy-1-methylbutyl]-O ⁶ -methyl-6,14-endoethenomorphine 3-O-Acetyl-7a-[1(R)-hydroxy-1-methylbutyl]-6,14-endoethenotetrahydro-orphine 3-O-Acetyl-19-propylorvinol M.183 is the hydrochloride Diallyldinitrotoxiniferin dichloride Alloferin	Narcotic analgesic
Alcuronium Chloride	2-Diethylaminoethyl 2-phenylbutyrate citrate	Muscle relaxant
Butethamate Citrate	2-(3,4-Dichlorobenzamido)-phenoxyacetic acid	Antispasmodic
Clamidoxic Acid ..	SNR 1804	Anti-rheumatic
Cyprenorphine ..	12-Cyclopropylmethyl-1,2,3,3a,8,9-hexahydro-5-hydroxy-2a-(1-hydroxy-1-methylethyl)-3-methoxy-3,9a-etheno-9,9b-iminoethanophenanthro[4,5-bcd]furan N-Cyclopropylmethyl-7,8-dihydro-7a-(1-hydroxy-1-methylethyl)-O ⁶ -methyl-6,14-endoethenomorphine N-Cyclopropylmethyl-7a-(1-hydroxy-1-methylethyl)-6,14-endoethenotetrahydro-orphine N-Cyclopropylmethyl-19-methylnororvinol M.285 is the hydrochloride	Antagonist to narcotic analgesics
Debrisoquine ..	2-Amidino-1,2,3,4-tetrahydroisoquinoline	Hypotensive
Dibupyrone ..	Sodium 2,3-dimethyl-1-phenyl 5-pyrazolon-4-yl-N-isobutylamino methanesulphonate	Analgesic
Diphenidol ..	Present in Melufin	Antiemetic
Etorphine ..	1,1-Diphenyl-4-piperidinobutan-1-ol 1,2,3,3a,8,9-Hexahydro-5-hydroxy-2a-[1(R)-hydroxy-1-methylbutyl]-3-methoxy-12-methyl-3,9a-etheno-9,9b-iminoethanophenanthro[4,5-bcd]furan 7,8-Dihydro-7a-[1(R)-hydroxy-1-methylbutyl]-O ⁶ -methyl-6,14-endoethenomorphine 7a-[1(R)-Hydroxy-1-methylbutyl]-6,14-endoethenotetrahydro-orphine 19-Propylorvinol M.99 is the hydrochloride	Narcotic analgesic
Fenaspate ..	4-Acetamido O-acetylalicylate	Analgesic
Fluocortolone ..	6a-Fluoro-11β,21-dihydroxy-16α-methylpregna-1,4-diene-3,20-dione	Corticosteroid
Follicle Stimulating Hormone	Ultralanum is the 21-hexanoate Extract of human postmenopausal urine containing primarily the follicle-stimulating hormone F.S.H. Follitropin (I.N.N.) Pergonal	
Metopimazine ..	10-[3-(4-Carbamoylpiperidino)-propyl]-2-methanesulphonylphenothiazine 9965 R.P.	Antiemetic
Niridazole ..	1-(5-Nitrothiazol-2-yl)imidazolidin-2-one	Treatment of schistosomiasis
Norbutrine ..	Ambilhar 2-Cyclobutylamino-1-(3,4-dihydroxyphenyl)ethanol N-Cyclobutylnoradrenaline R.D. 9338 is the hydrochloride	Bronchodilator
Oxybuprocaine ..	2-Diethylaminoethyl 4-amino-3-butoxybenzoate	Local anaesthetic
Poloxyl Lanolin ..	Novesine is the hydrochloride A polyoxyethylene condensation-product of anhydrous lanolin	Emollient
Pyrrocaine ..	Aqualose N-(Pyrrolidin-1-ylacetyl)-2,6-xylylidine Endocaine	Local anaesthetic
Spirilène ..	8-[4-(4-Fluorophenyl)pent-3-enyl]-1-phenyl-1,3,8-triazaspiro[4,5]decan-4-one	Tranquillizer
Tetracycline Phosphate Complex	A relatively insoluble complex of sodium metaphosphate and tetracycline Tetrex	Antibiotic